FERC's Market Manipulation Rule:
Impact on FTRs and the Virtual Market

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Energy Bar Association
Midwest Chapter Annual Meeting

Presented by:

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THE Brattle GROUP

Objectives

This discussion should show us how to:

- Recognize the trading behavior related to FTRs and virtual bids that can trigger a FERC investigation
- Understand the economics behind the potential manipulation of FTRs with virtual bids
- Identify effective compliance policy regarding FTRs and virtual bids

Agenda

Behavior that can be Viewed as Manipulation

Economics of FTRs and Virtual Bids

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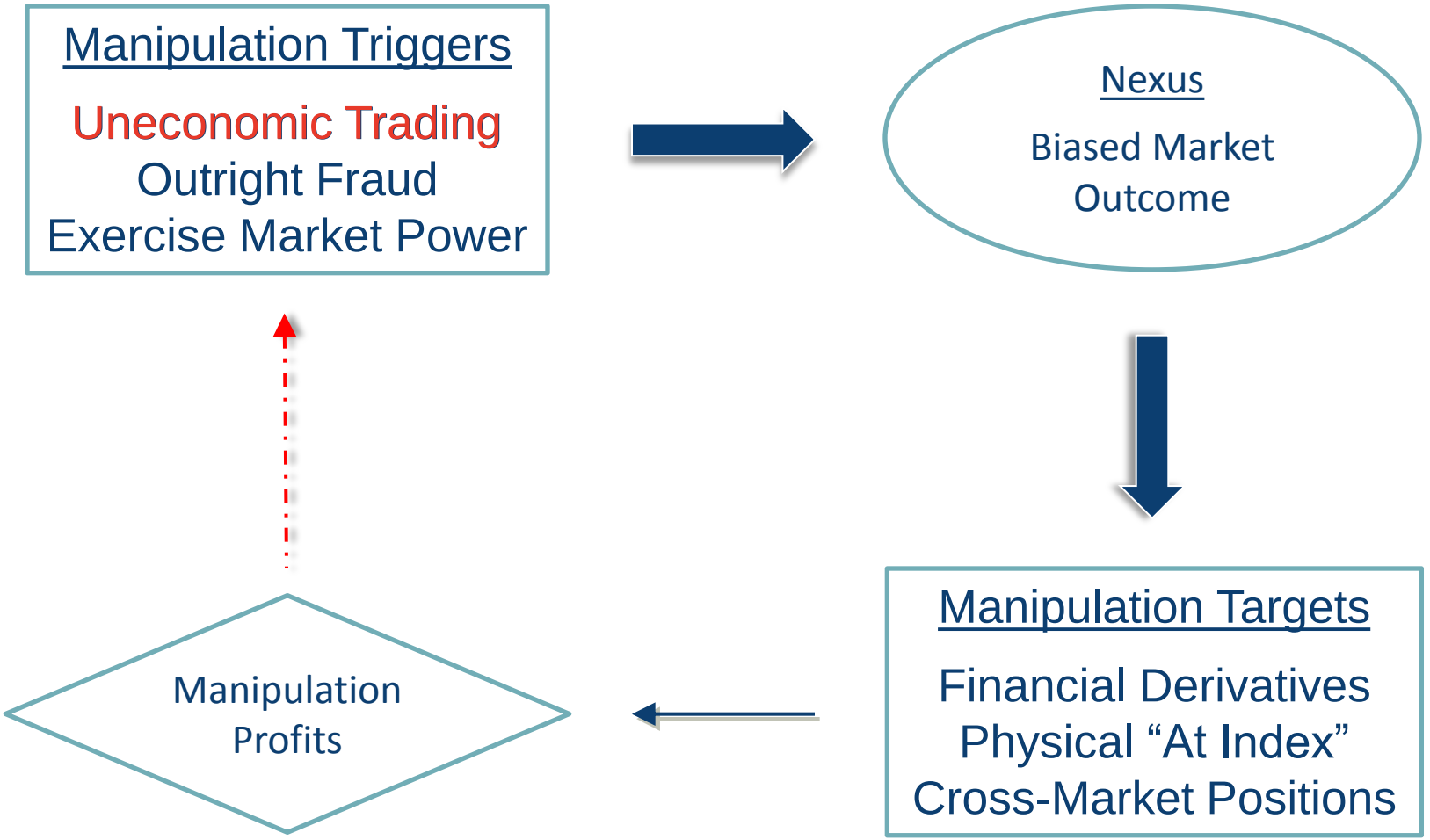
Behavior that can be Viewed as Manipulation

Economics of FTRs and Virtual Bids

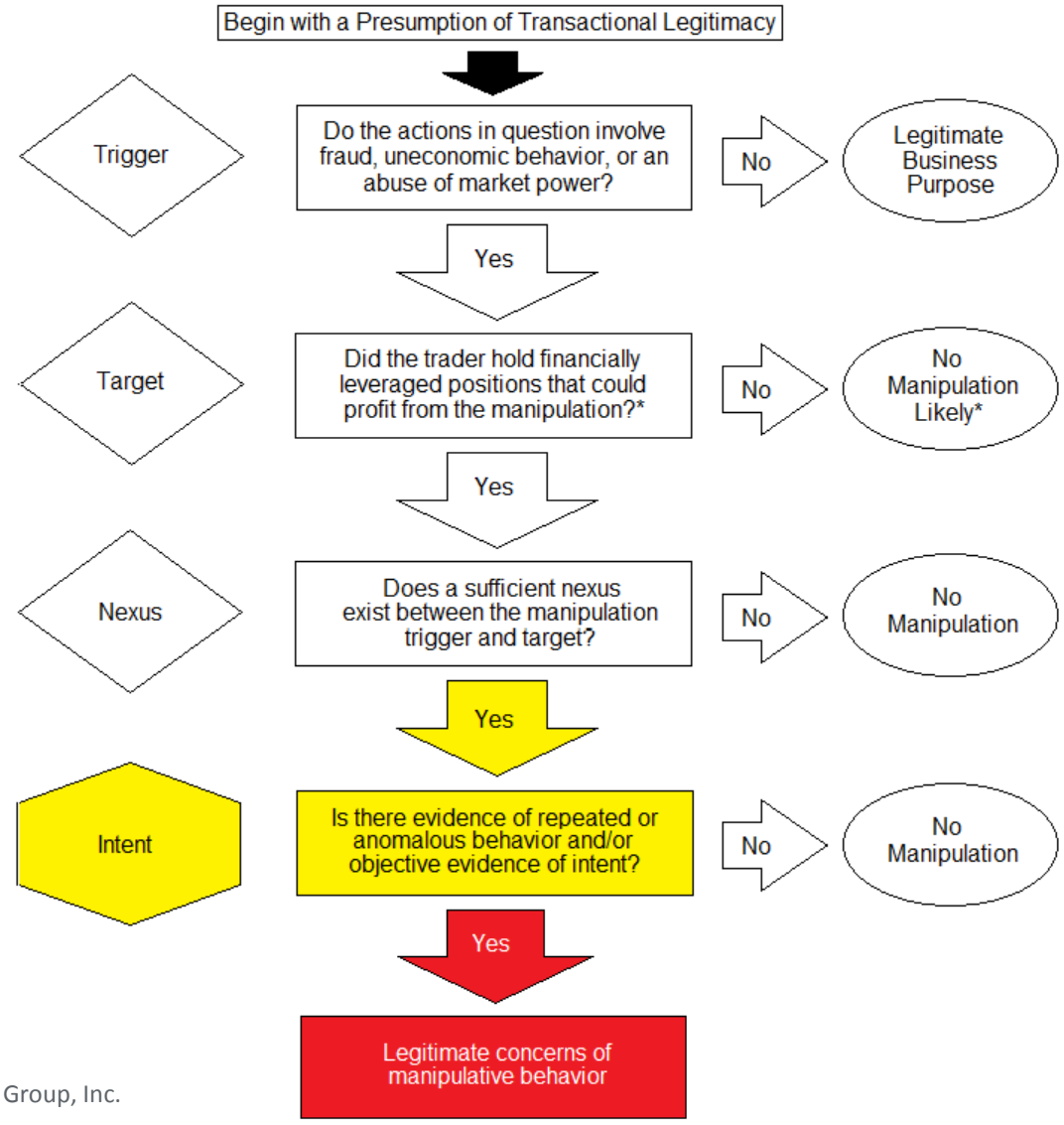
Three types of behavior can trigger a manipulation

- **Outright fraud:**
  - Informational Fraud: lying to the market
    - *Example: submitting a false report*
  - Fictitious Transactions: selling "snake oil"
    - *Example: circular scheduling to increase congestion*
- **Withholding:**
  - Traditional concept of market power; reducing supply to increase price
    - *Example: offering a unit above cost to increase LMPs*
- **Uneconomic behavior:**
  - Intentionally "losing money" on a trade or position to realize a gain on a benefiting position
  - "Losing money" in the economic sense, not accounting sense
  - Trades lose money all the time; proving intent poses challenges
    - *Example: loss-making virtual bids that benefit an FTR position*

A framework to analyze cause & effect



Analysis of an alleged manipulation



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Behavior that can be Viewed as Manipulation

Economics of FTRs and Virtual Bids

A model: The interaction of virtual bids and FTRs

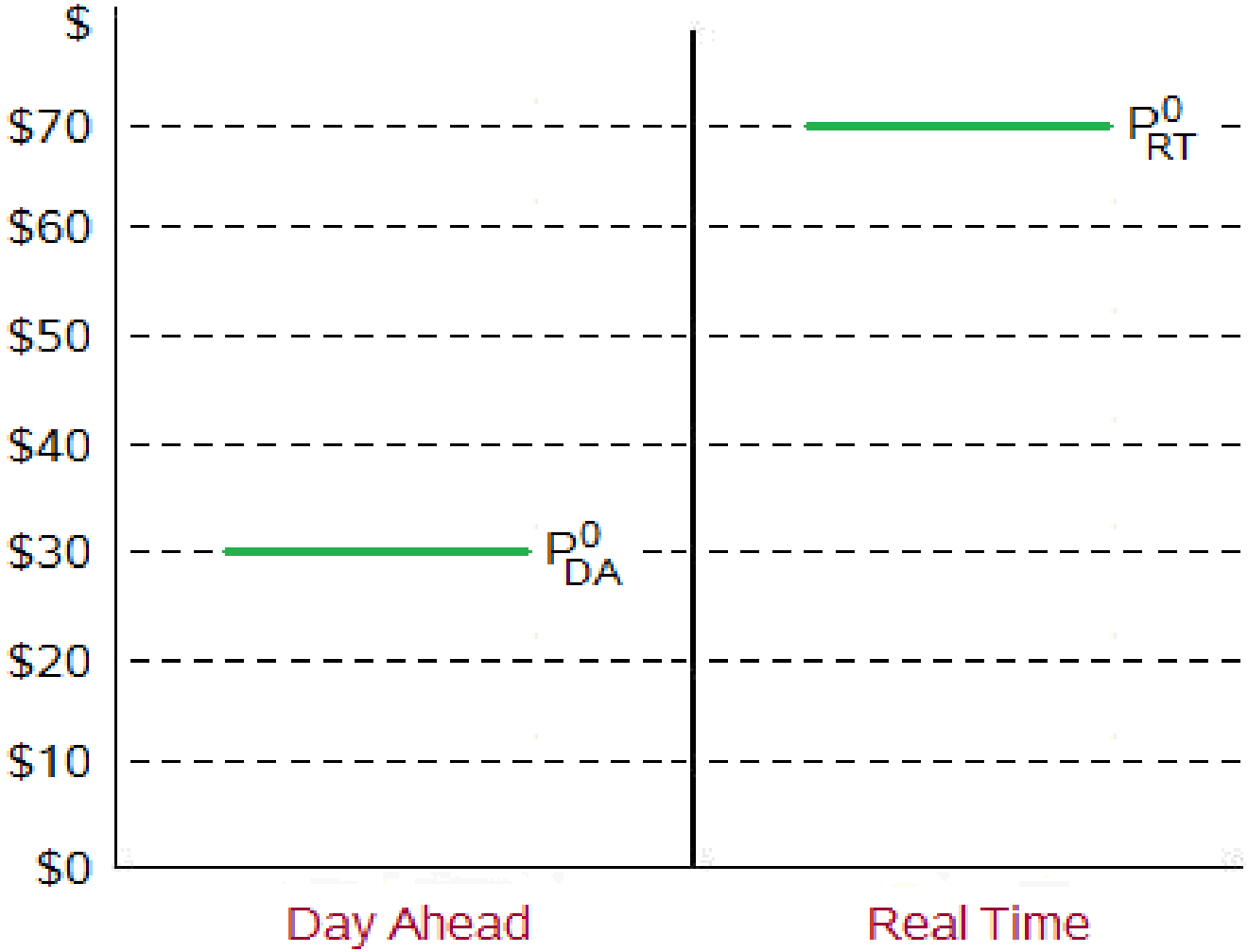
The following economic model assumes a trader places virtual load (a.k.a., "DECs") at the sink of its FTR position:

- We begin by describing the trader's decision to place virtual bids on a stand-alone basis
  - Initial simplifying assumption of only one virtual trader
  - Reality check afterwards (very important)
- Next, we see how the addition of a FTR affects the trader's behavior
  - The profitability of the manipulation is shown to depend on the size of the FTR position
- The model illustrates the level of virtual bidding that suggests manipulation of the FTRs, *But...*
- Must be corroborated with additional evidence of intent

The economics of trading virtuals

- **Virtual supply and demand (collectively, "virtuals") are valuable instruments in the market for several reasons:**
  - The ability to hedge or speculate on price differences between the day-ahead and real-time at a particular node
  - Added liquidity can mitigation market power concerns
  - Generation owners can hedge against the risk of a unit outage
- **A trader bids DECs if she believes that the day ahead LMP will clear below the real time LMP in a given hour at that same location:**
  - A trader "virtually" buys MWs in the day ahead market, and sells them back to herself in the real time market
  - Payment to a DEC bid = $(LMP_{RT} - LMP_{DA})*MW$
- **DECs tend to raise congestion prices in the day ahead market and to lower congestion prices in the real time market:**
  - DECs are price setting transactions
  - Converge LMPs between the day ahead and real time
  - This can be used to trigger a market manipulation

The convergence principle of virtual bidding



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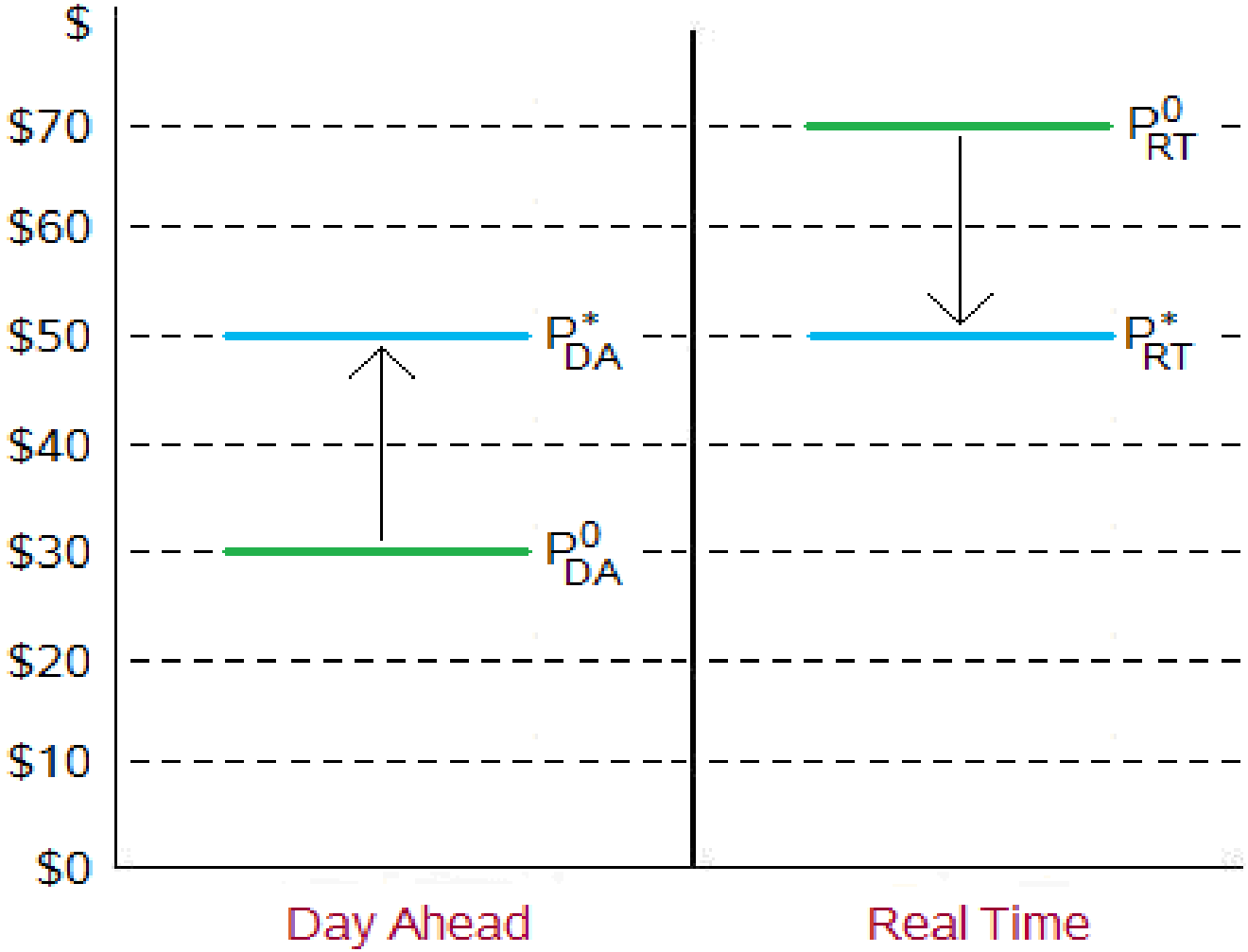
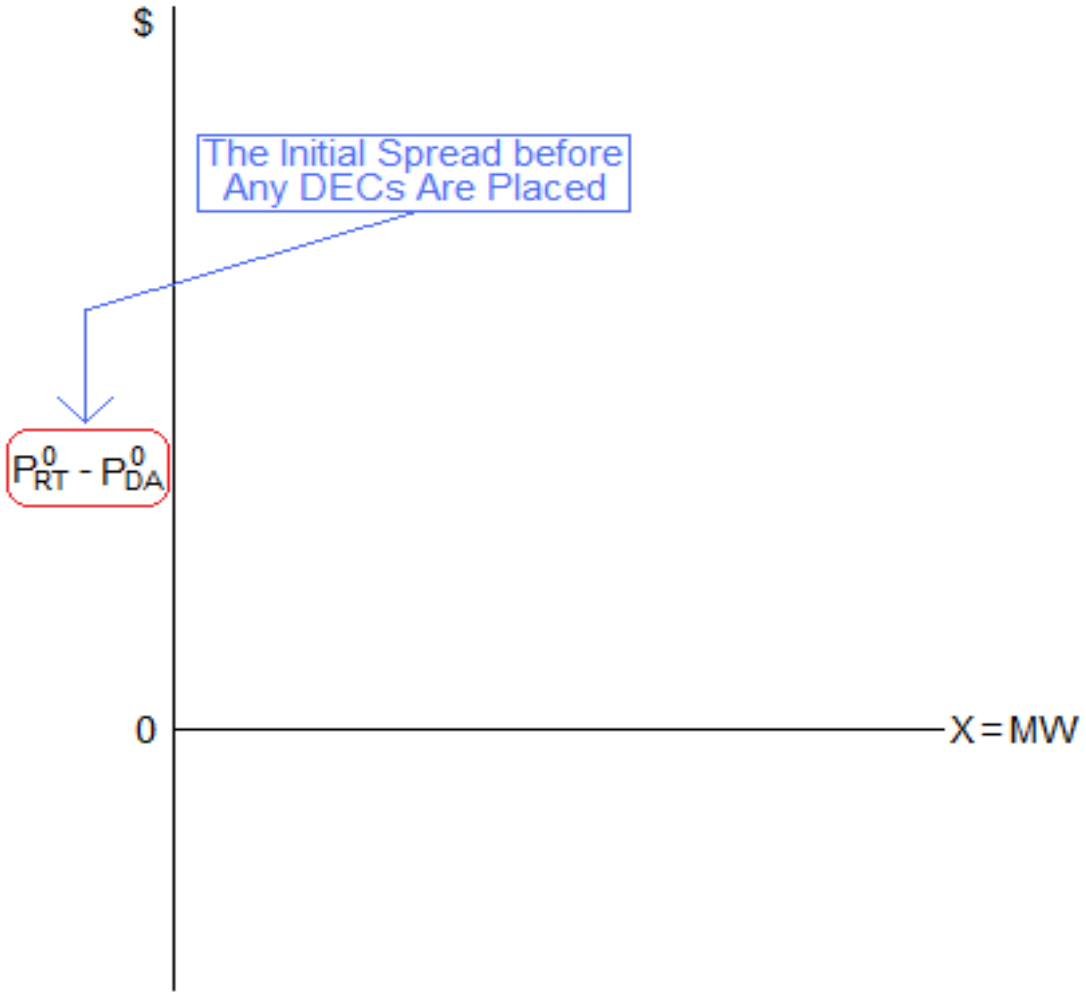


The derived demand for decremental bids



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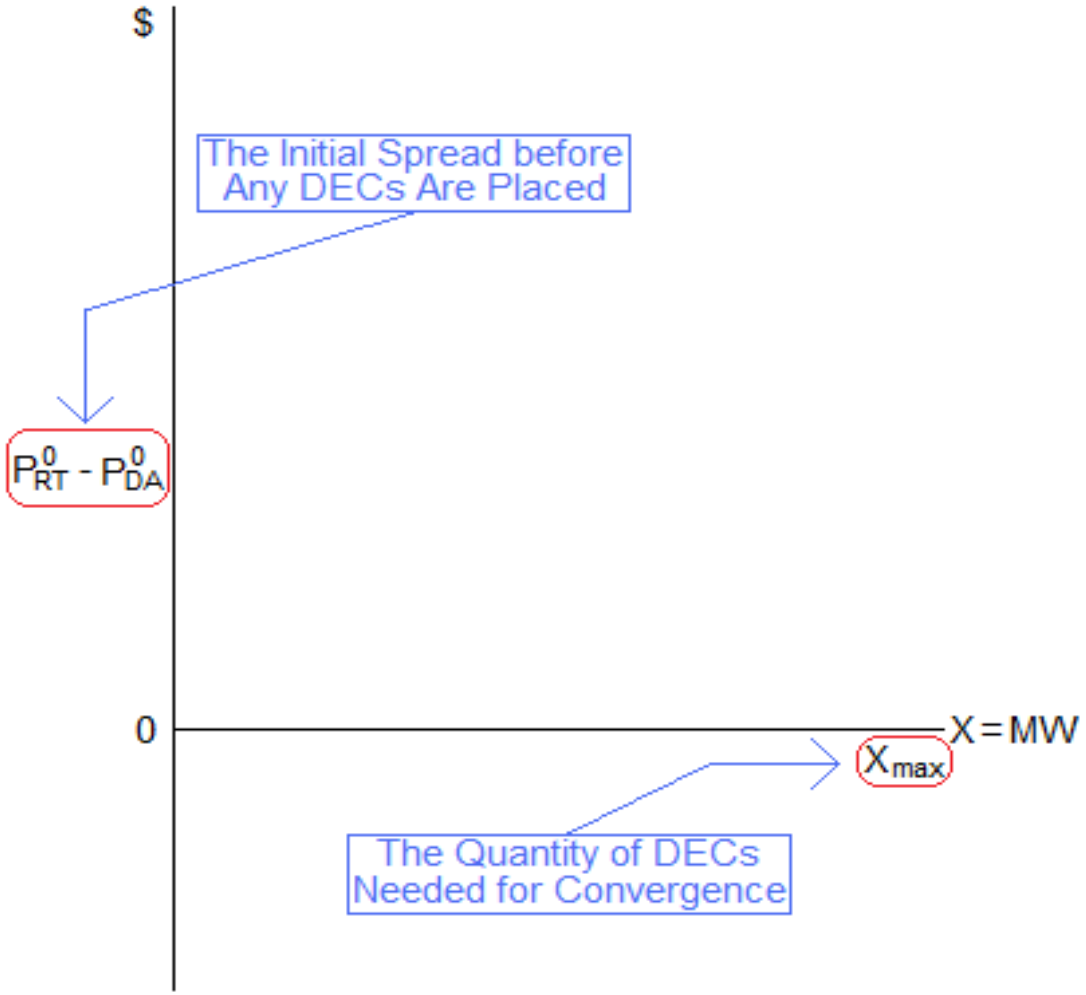

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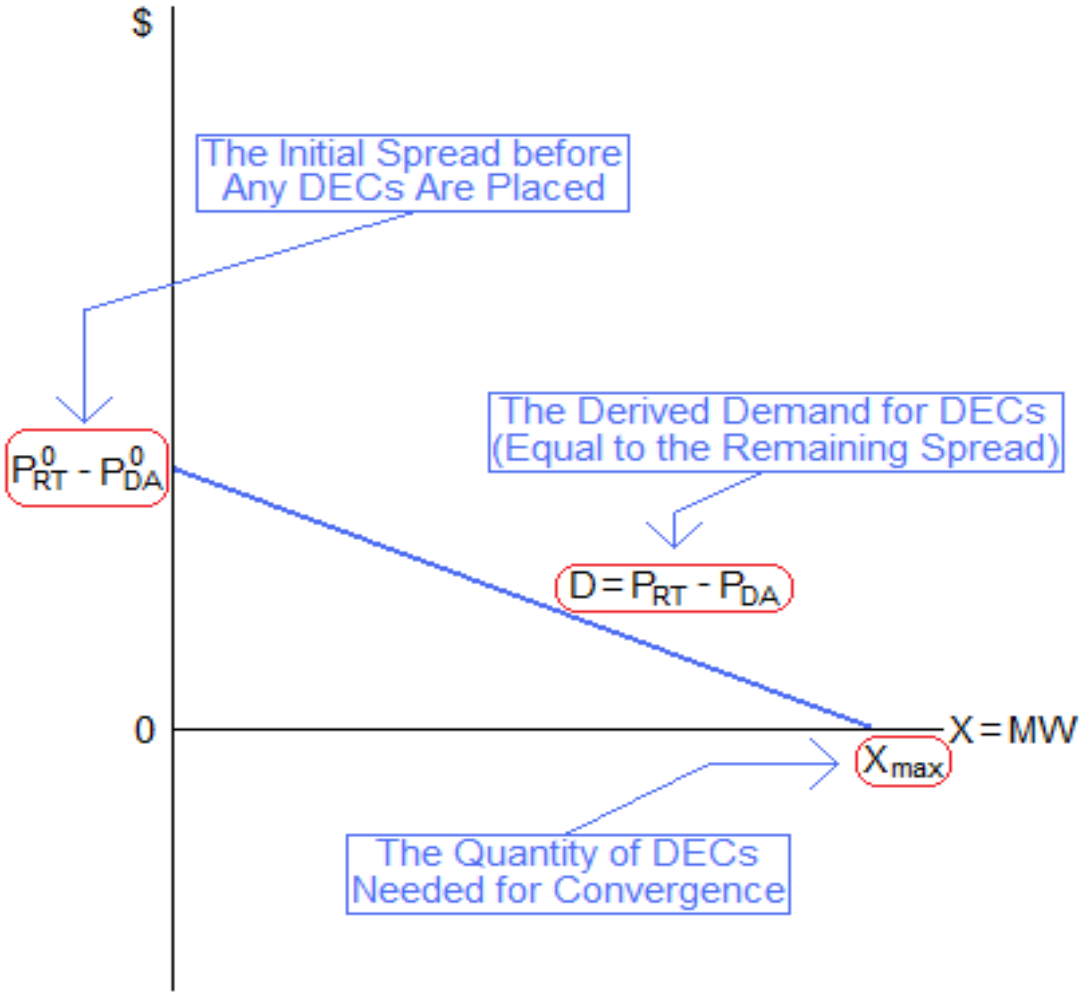
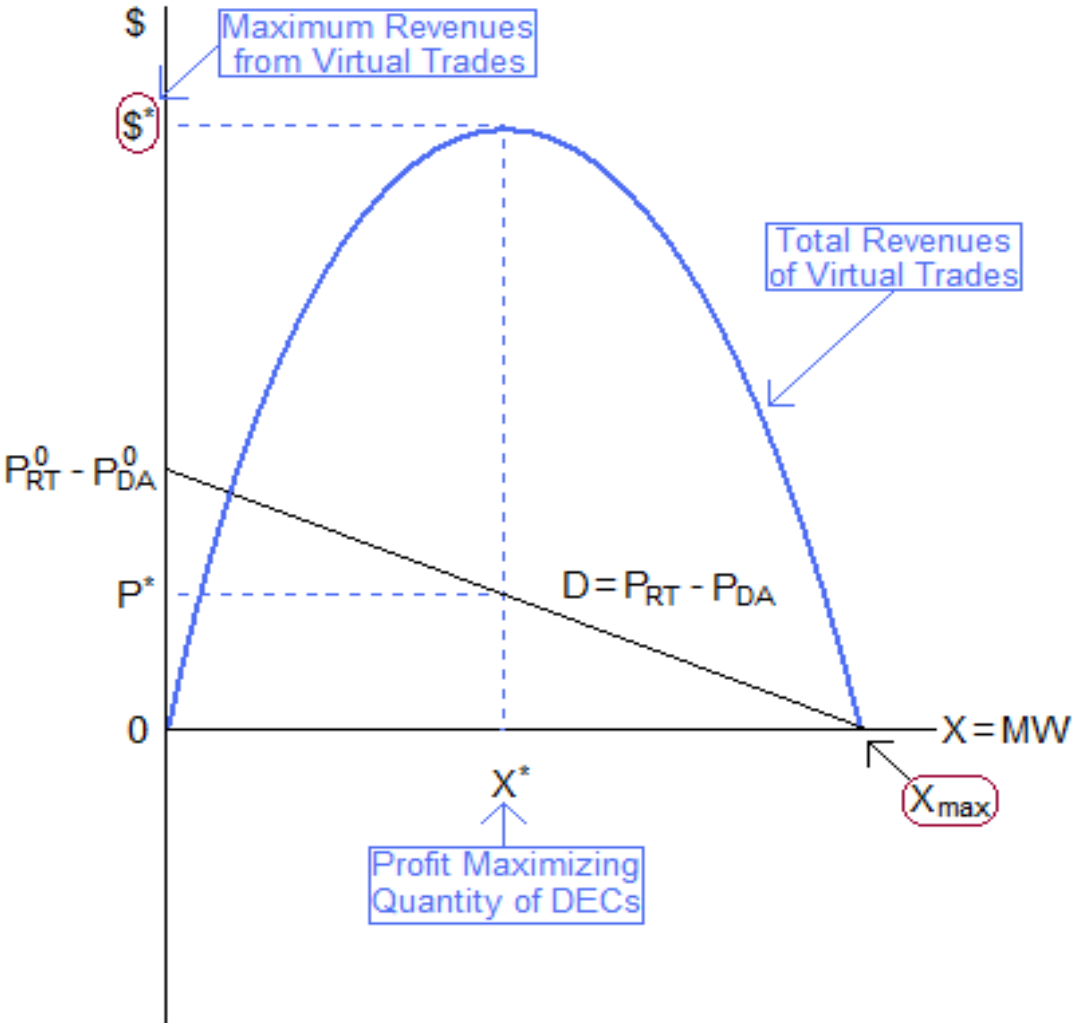
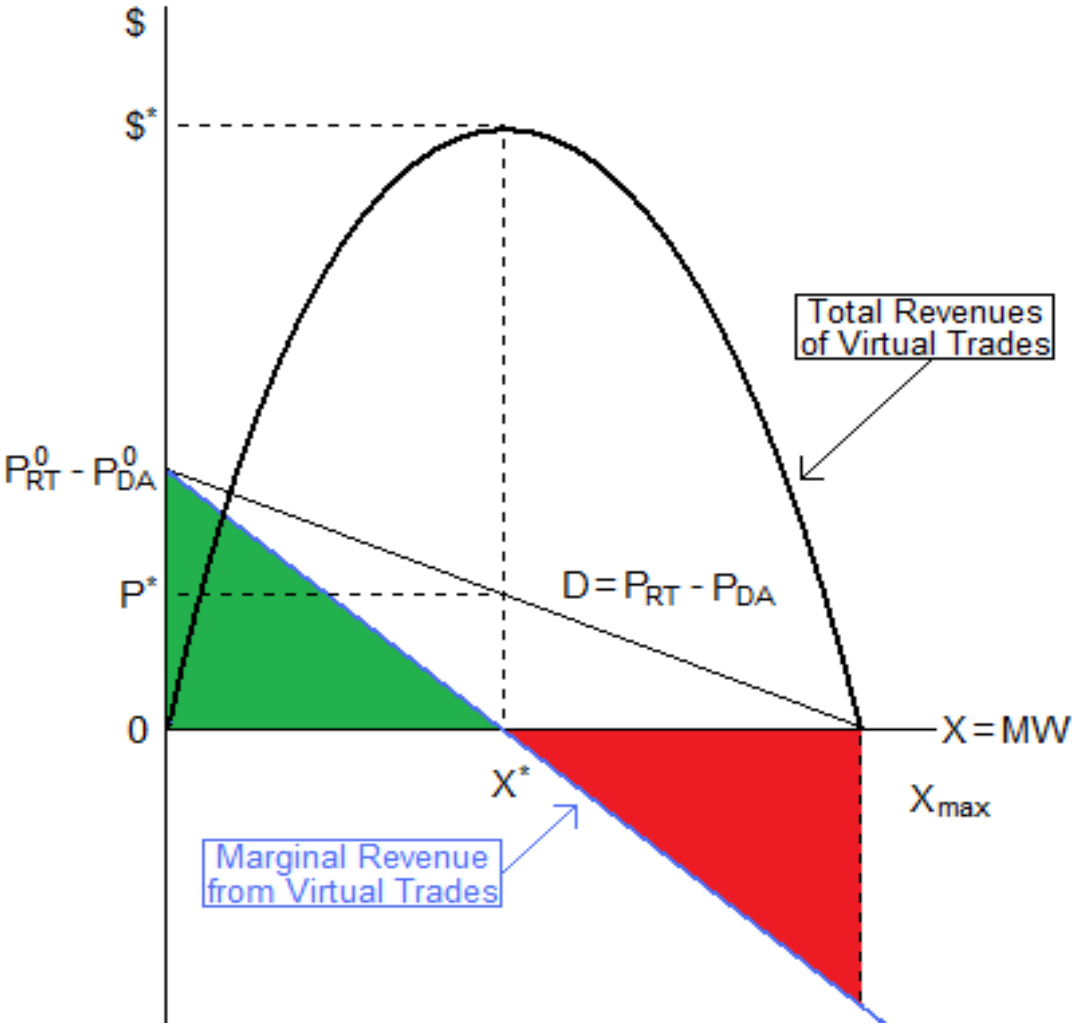


The paradox of convergence for virtual bids



Marginal losses on DECs beyond X*

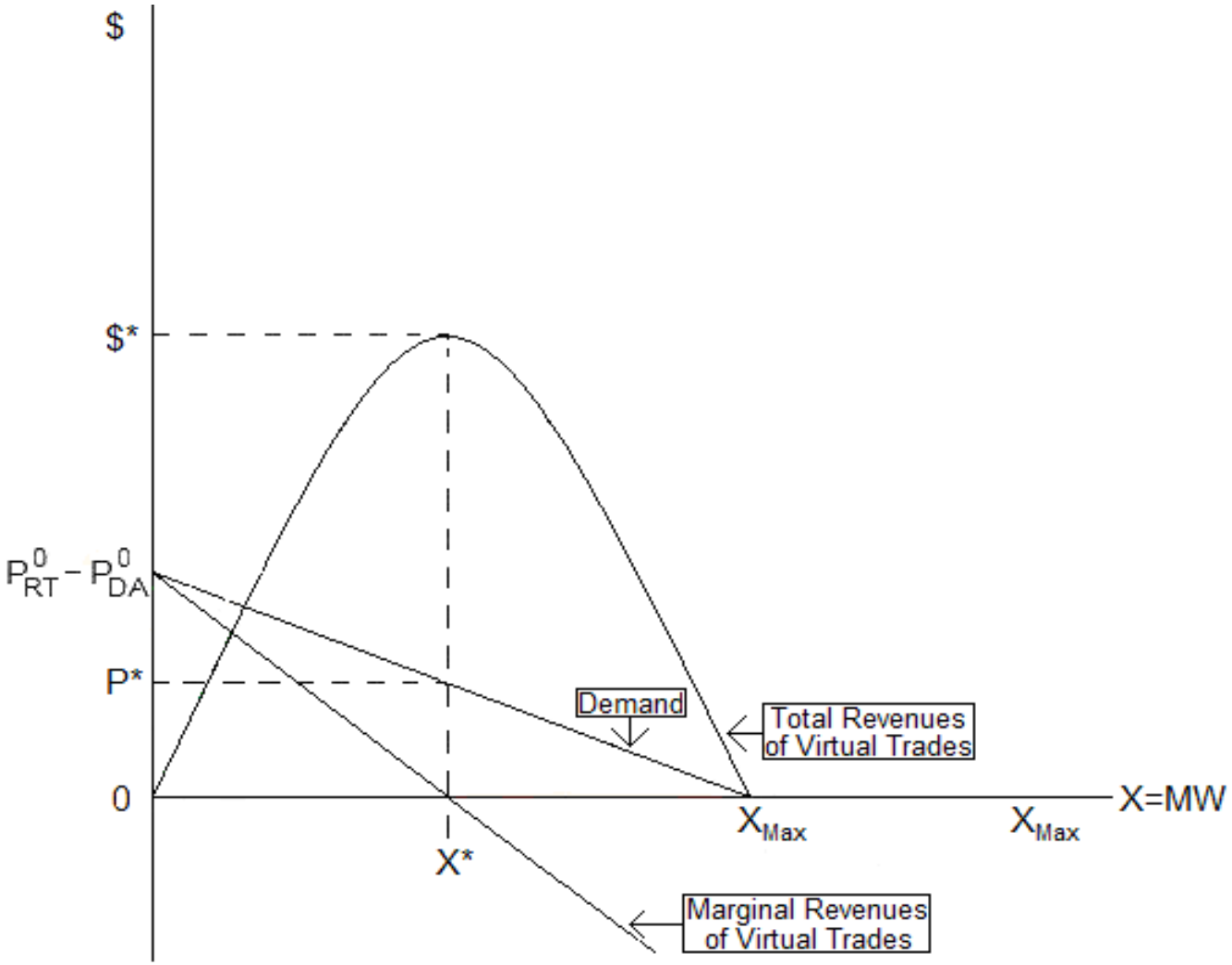


The addition of FTRs to the virtual trader's portfolio

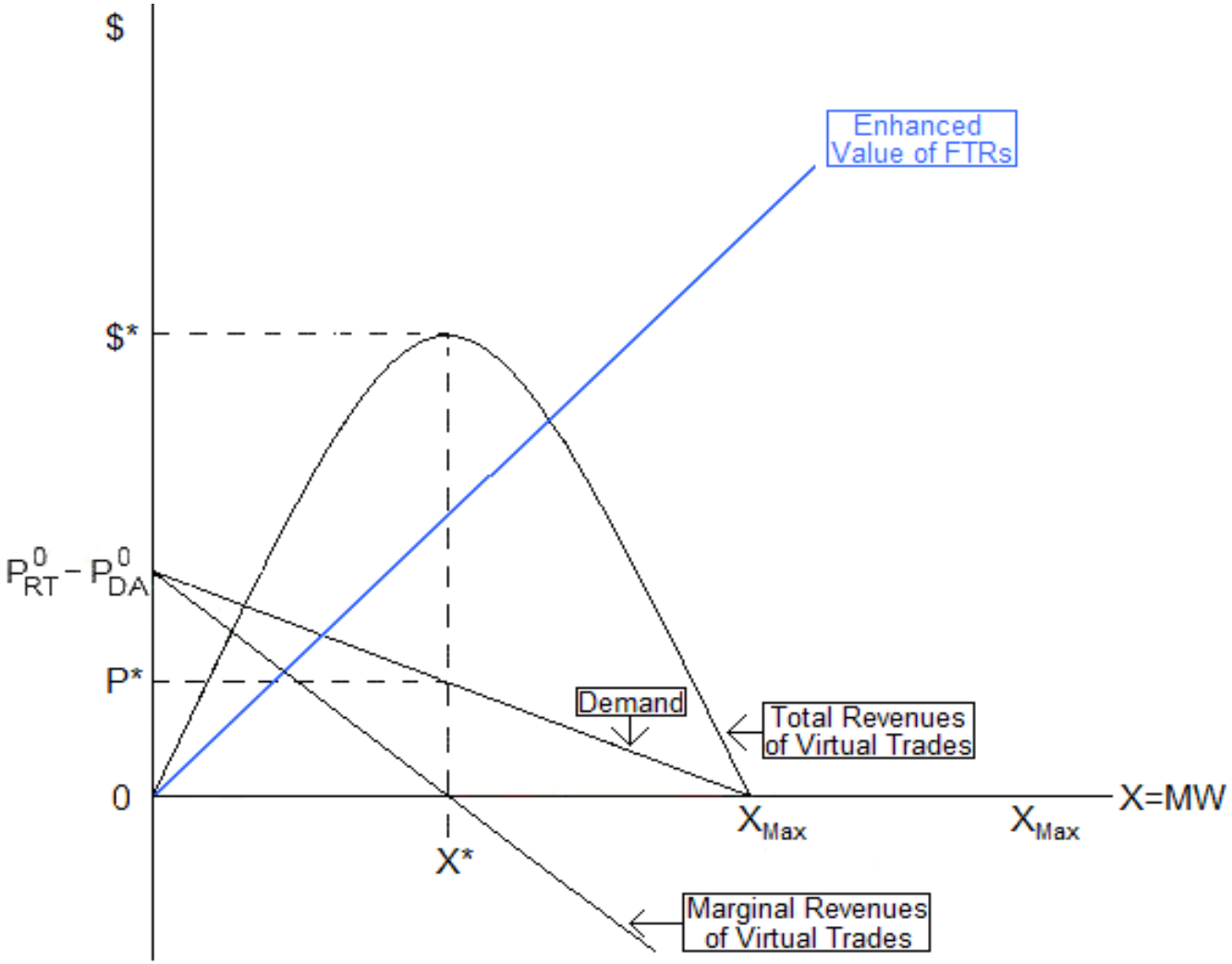
- **FTRs (a.k.a. "CRRs" or "TCCs") give market participants the ability to hedge or speculate on price differences between the day ahead prices at two locations:**
  - A FTR pays its holder the difference in the day ahead congestion prices between the FTR's "source" and "sink"
  - Payment to the FTR = $(P_{sink} - P_{source})*MW$
  - FTRs are price taking instruments

- **If the FTR sinks at the same point where the virtual trader places DECs, the value of the FTR will progressively increase as more DECs clear due to an increase in the day ahead congestion price:**
  - FTRs can be the target of a manipulation triggered by DEC bids

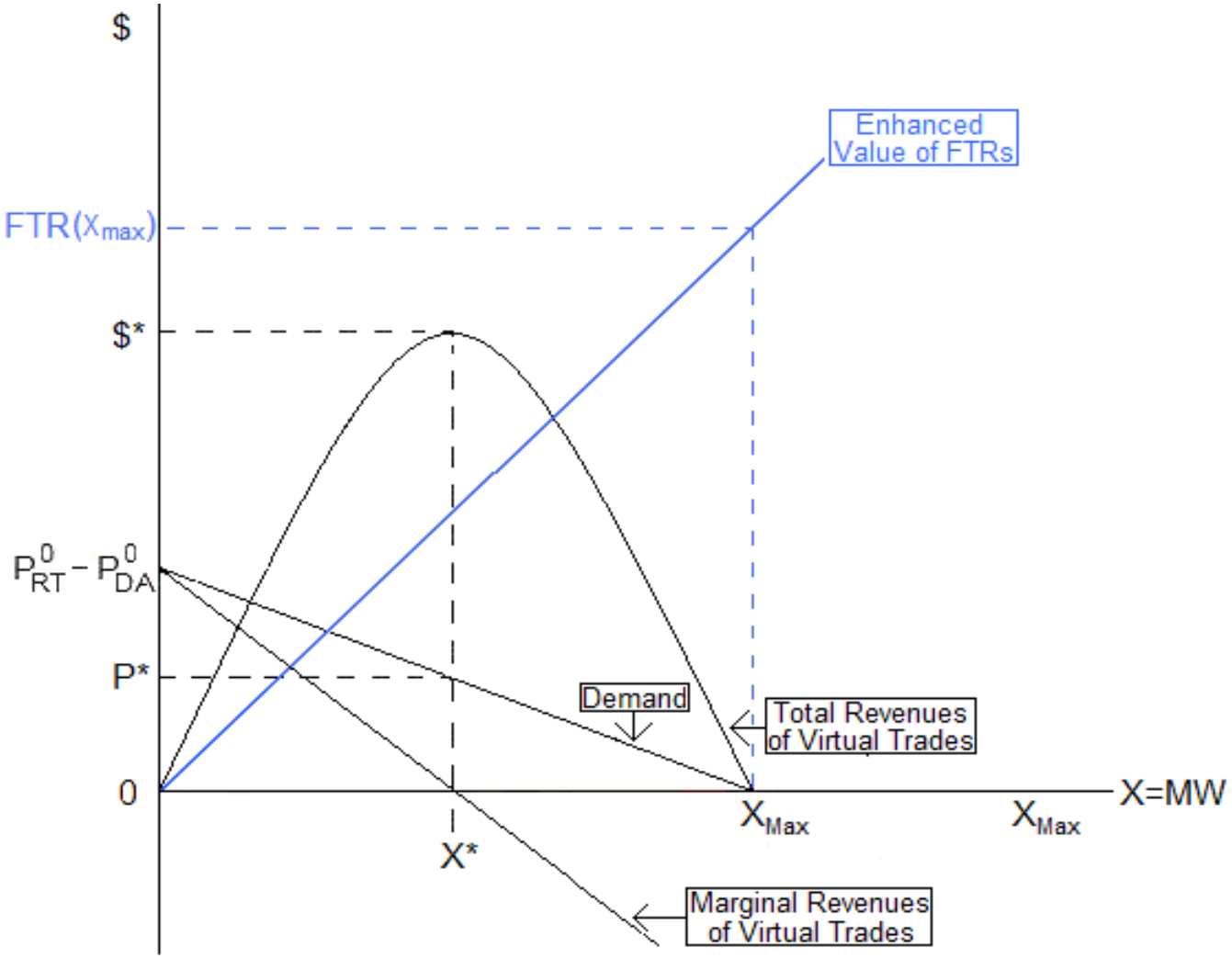
Total revenues: Placing DECs at a FTR sink



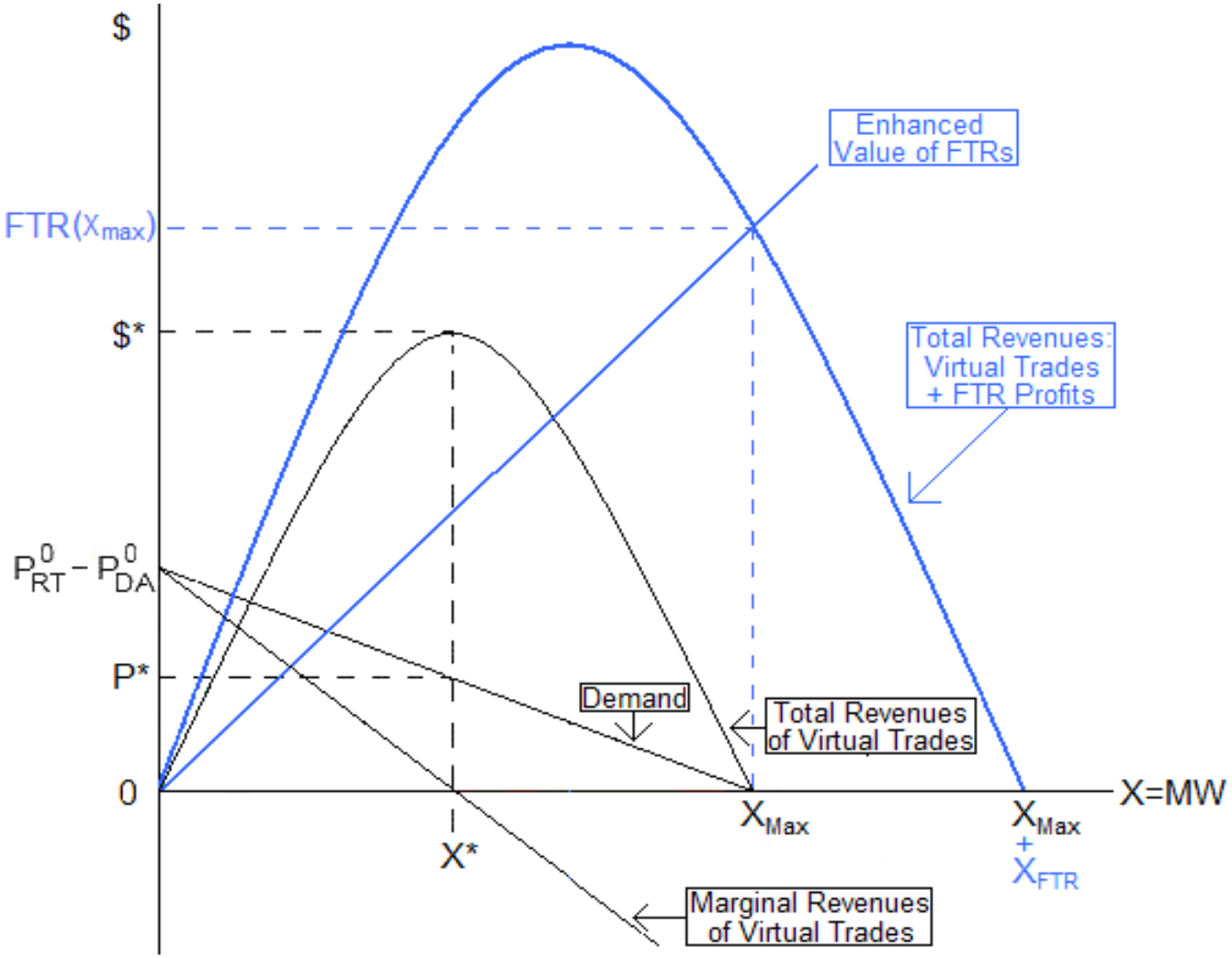
Placing DECs at sink raises FTR value



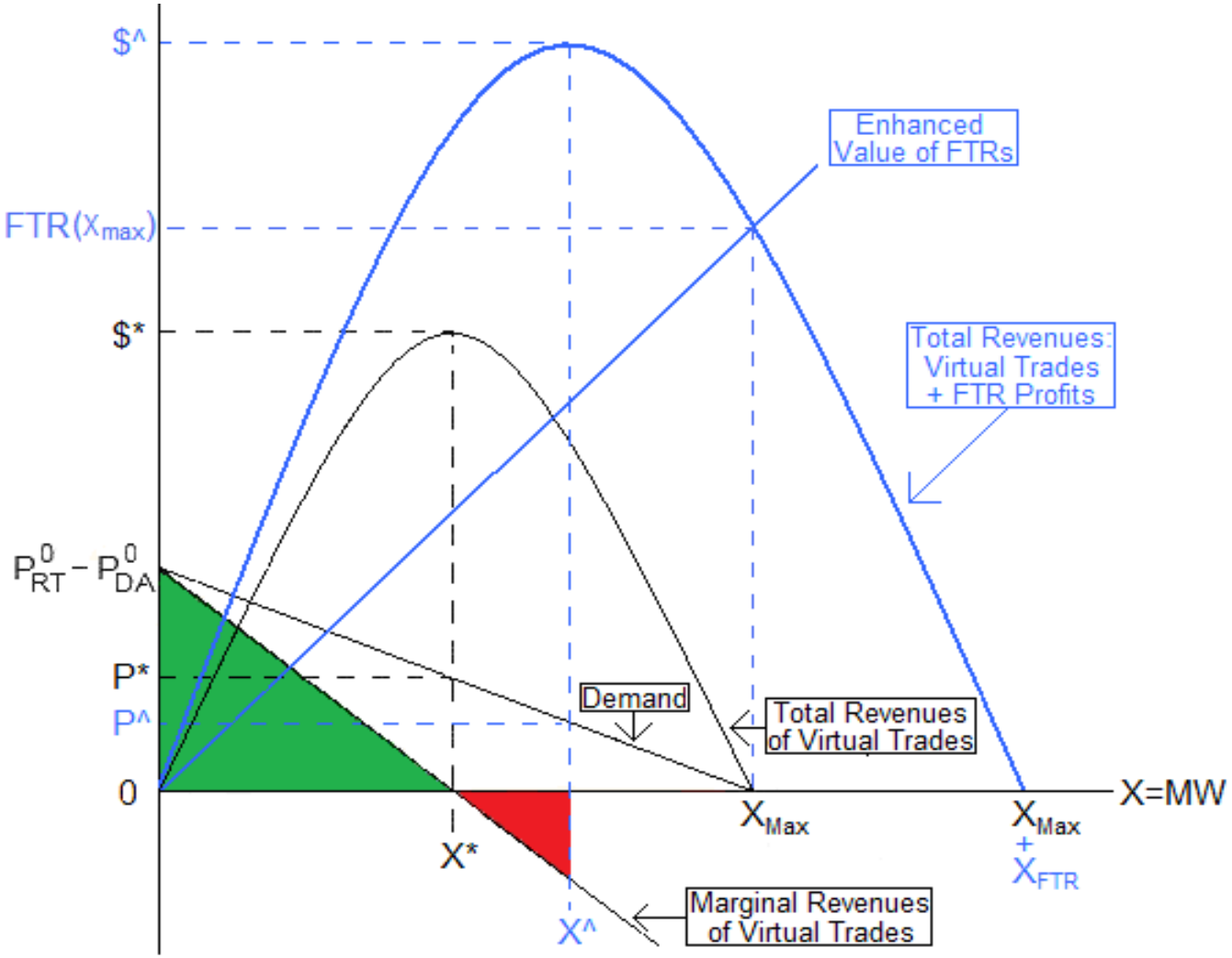
Convergence brings FTR value to FTR(X_{max})



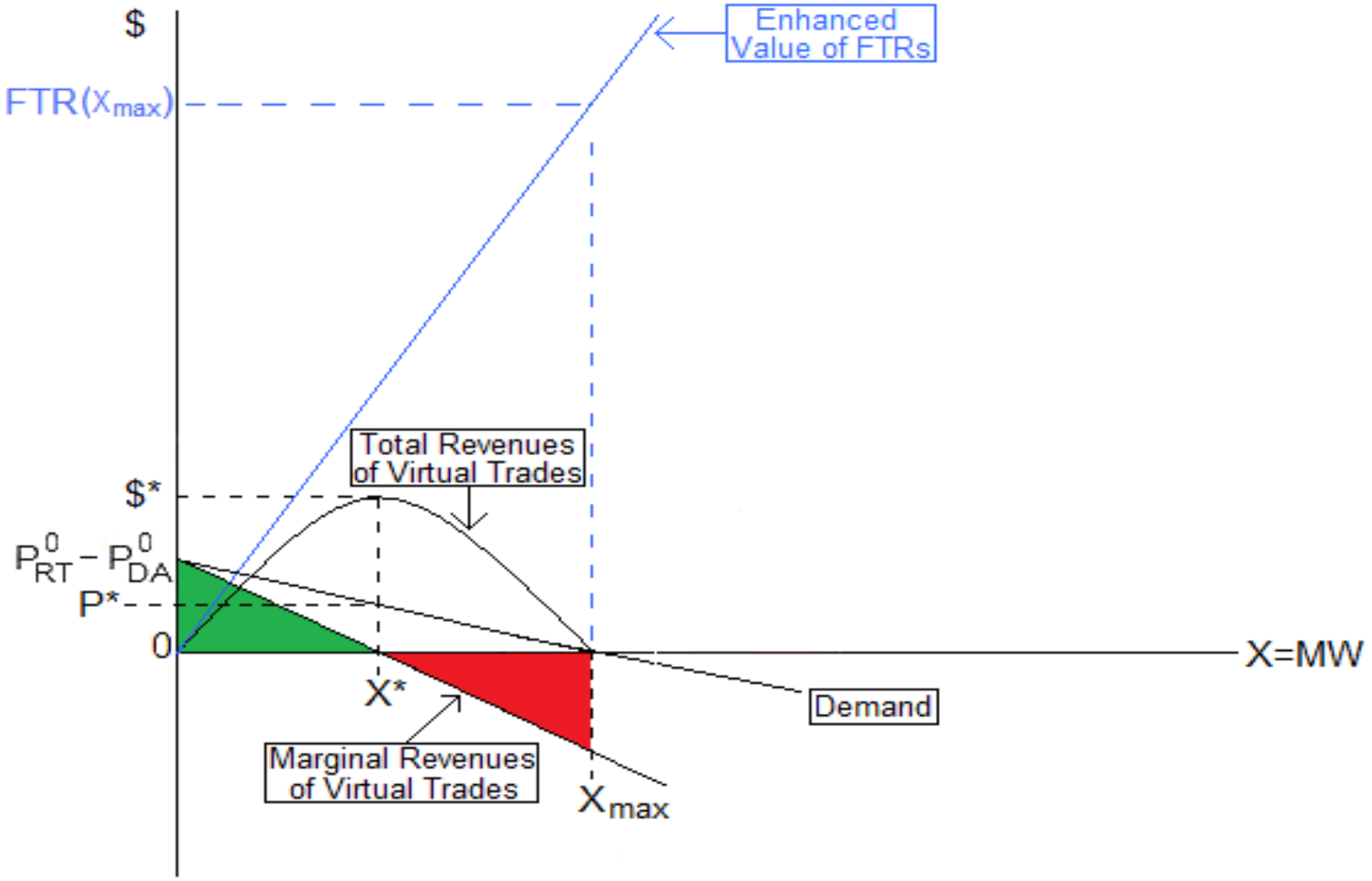
Total revenues from DECs and FTR combined



Maximizing total portfolio value lowers virtual gains



Greater FTR leverage incentivizes virtual losses



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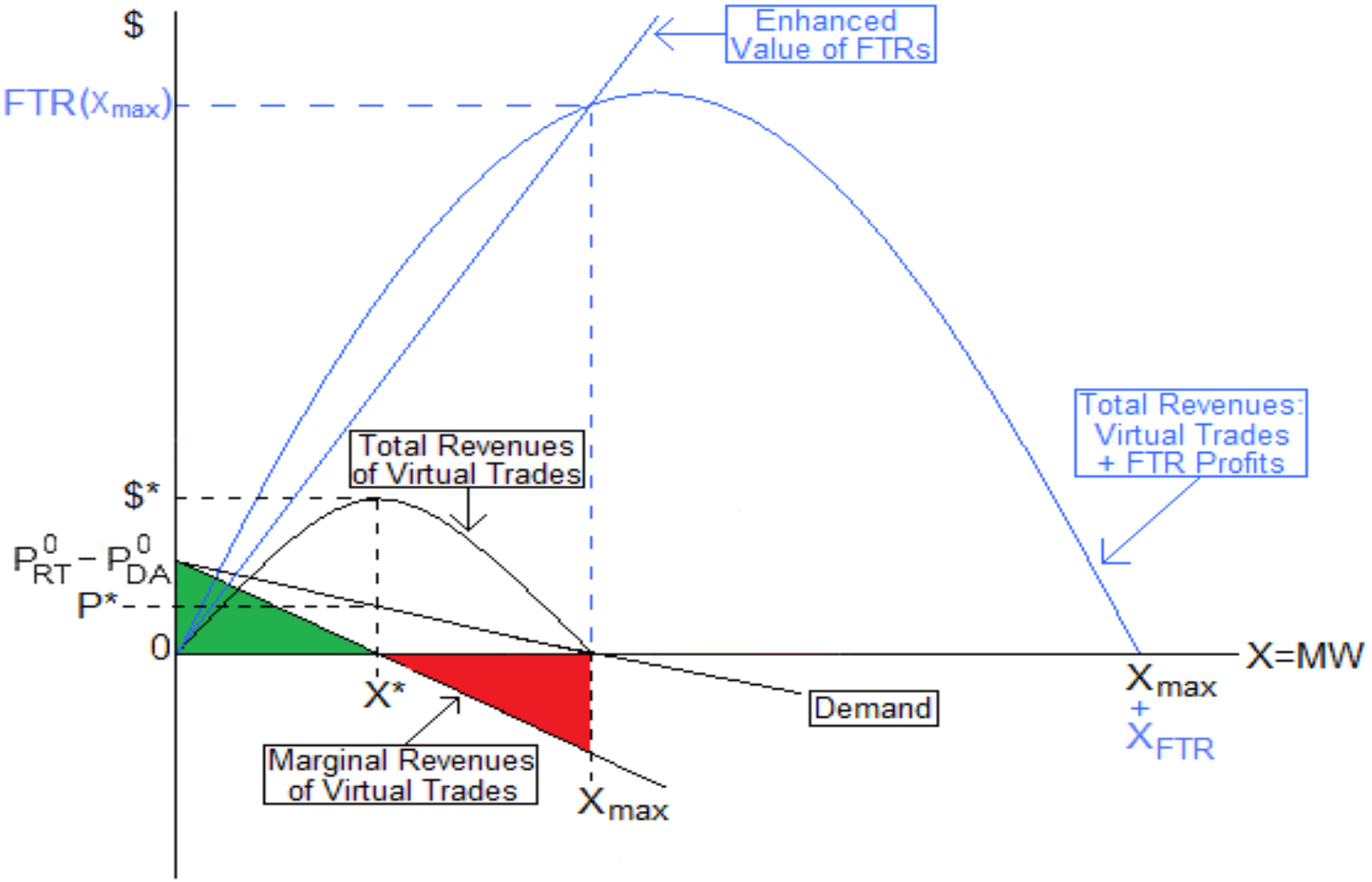
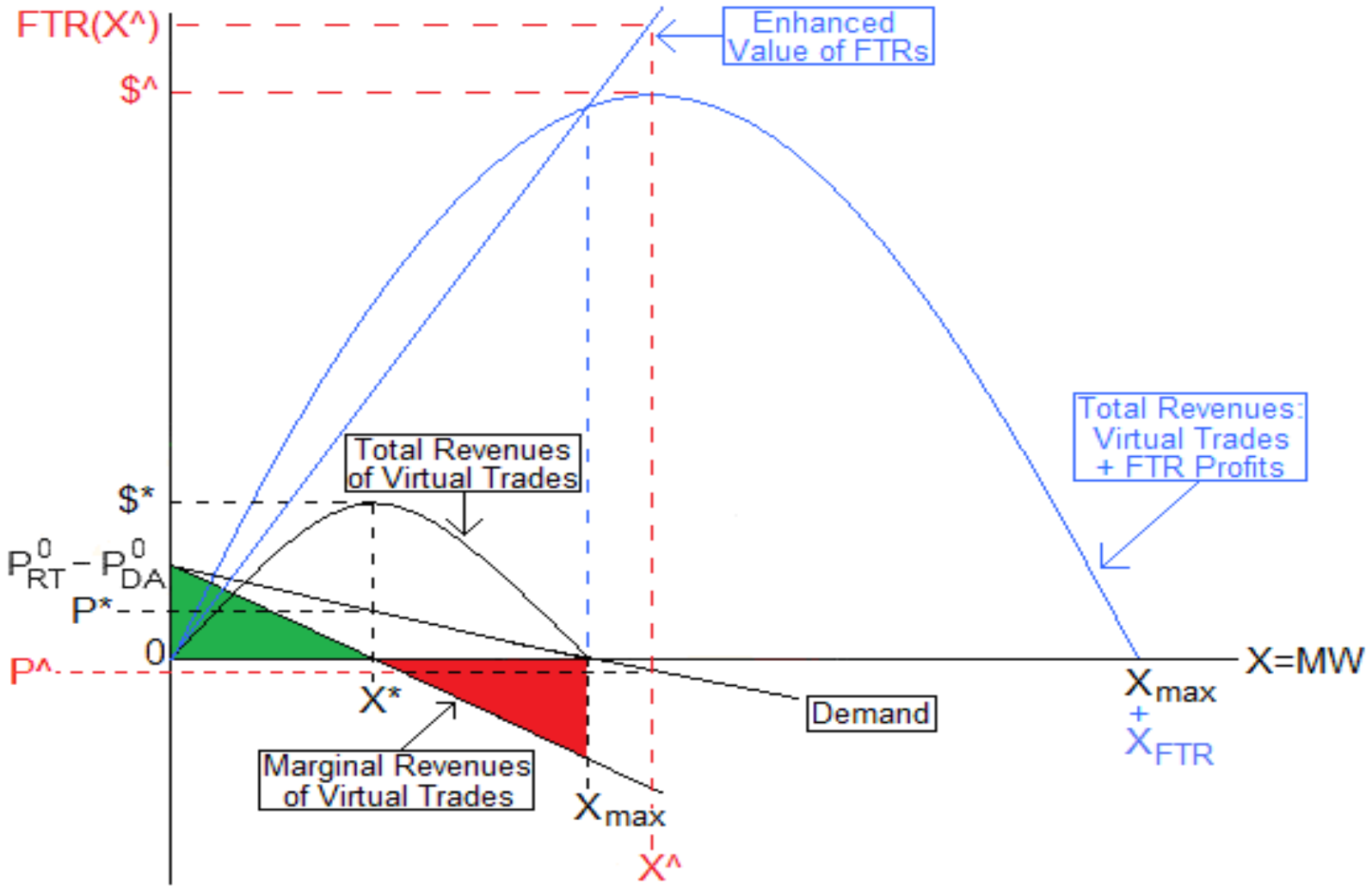
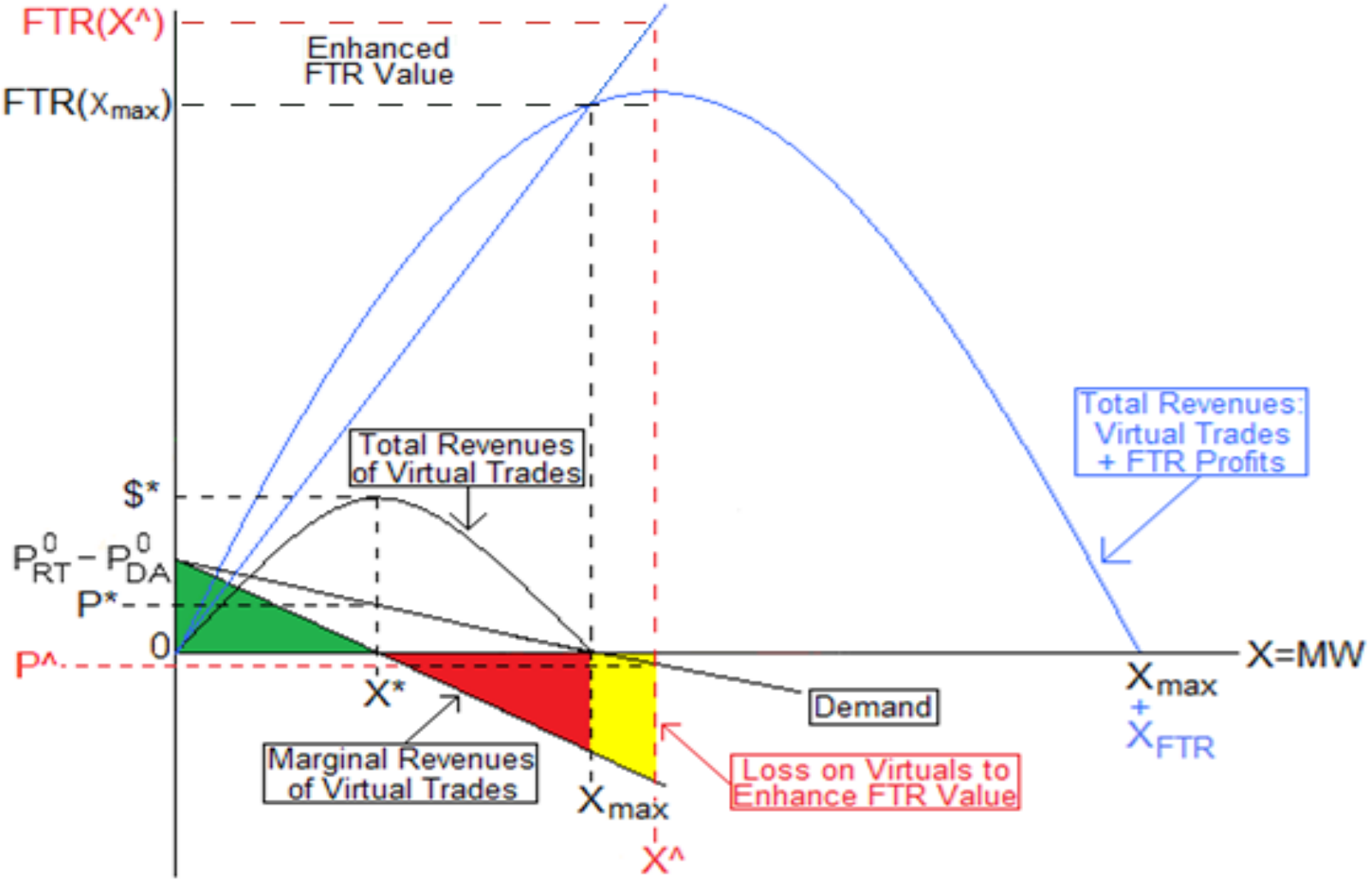


Trader seeks to clear DECs in excess of X_{max}



Losses on virtuals increase profit of total portfolio



Final Thoughts

- **Compliance policy can be extreme:**
  - Prohibiting all virtual trading at nodes with FTR positions will eliminate the chance of this type of violation
  - This will also eliminate legitimate and profitable virtual trades
  - Such a result would harm the virtual market by reducing liquidity
- **Beyond FTRs and virtual bids:**
  - The framework discussed here can be applied to analyze the cause and effect relationship in any possible or alleged manipulation
  - Identifying the "nexus" between different positions is key to developing effective compliance policy
  - There are normal degrees of losses inherent to all risk-taking behavior:
    - In a fair market half of all trades lose money
    - *Example: Guessing wrong on the DA-RT spread with a virtual position*
    - Monitor for repeated and concentrated uneconomic results
- **Danger of a "per se" standard:**
  - Enforcement posture of the FERC is growing more aggressive
  - Is proof of intent to benefit another position enough?

Speaker Bio and Contact Information

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Note:

The views expressed in this presentation are strictly those of the presenter and do not necessarily state or reflect the views of *The Brattle Group, Inc*.

Mr. John Tsoukalis is an Associate at The Brattle Group with experience across a board range of issues in electric utility economics. These include electric utility strategic planning, manipulation across electricity markets, and electric transmission development. He has assisted electric utility clients in developing their strategic plans for participation in wholesale markets and in confronting regulatory uncertainty. John is engaged with utility clients to determine their regulatory exposure due to bidding practices in the wholesale electricity markets. He has helped develop tests to detect the presence of uneconomic behavior and to assess the potential price distortion caused by this behavior. He is assisting several clients in defending against investigations or enforcement actions for allegedly manipulative behavior. He has supported the development of testimony to assist regulatory agencies with their design of appropriate tariff provisions to properly allow for adequate cost recovery while identifying and mitigating potentially manipulative behavior.

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